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ABSTRACT

Administrators at two-year college and secondary area vocational centers accredited by the Southern Association of Colleges and Schools were surveyed regarding their institutions' actual and ideal involvement in 29 economic development activities. Usable data were collected from 345 administrators, and data from 75 respondents were further analyzed for differences between states (7 Alabama and 68 non-Alabama), type of college (50 community college and 25 technical college), and interaction of state by type of college. The study found that Alabama administrators tended to perceive themselves to be doing less than they should for economic development, while non-Alabama administrators tended to perceive themselves to be doing more. Both community and technical college administrators tended to perceive themselves as doing more for economic development than they should. The survey instrument is included. (KP)

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Perceptual Differences in Economic Development Strategies Under Two Conditions for Alabama/Non-Alabama 2-yr College Administrators

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Abstract

Administrators (n=345) of 2-year SACS institutions registered perceptual importance assessments for 29 critical economic development strategies under Present and Should Conditions. Data from 75 respondents were analyzed further for differences due to demographic characteristics: State--Alabama or Non-Alabama, and College--Community or Technical. Single Principal Component clusterings accounted for 86% and 94% of observed variance respectively under the Present and Should conditions. While univariately there were no significant differences (<.05) due to State, Technical College administrators typically scored higher than those from Community Colleges under both Conditions. Multivariately there was significance (<.05) due to State, to College (<.10), and to the ConditionXState interaction (<.05). In the multivariate layout Alabamians perceived themselves as presently doing less than they should; non-Alabamians perceived themselves as doing more. In the multivariate test of College the main effects statistical difference was due to Technical College administrators typically perceiving themselves as more sufficient.

Perceptual Differences in Economic Development Strategies Under Two Conditions for Alabama/Non-Alabama 2-yr College Administrators

Educational leadership is presently needed to expand proactive roles of postsecondary education commensurate with its opportunities for assisting America's faltering economy and to maximize the economic potential of community and technical college graduates. America's economic situation and the related needs for higher education further provide unique opportunities for community and technical colleges to facilitate community economic development activities at a variety of skill and technical levels.

Economic development in education can be defined as a planned process to accomplish two major service objectives: (a) helping to make business profitable and productive, while (b) helping to create job opportunities and train qualified workers to fill them. Economic development has been and will continue to be a complex, education-intensive process. Although community and technical colleges have served to fill critical roles in this process for several decades, in recent years personnel from both institutional types have been asked to expand their economic development activities by considering new purposes and forming new partnerships with both public and private groups interested in the economic well being of their local communities.

In the past ten years, two types of two-year post-secondary educational institutions (i.e., community and technical colleges and area vocational-technical centers) have increasingly offered programs and services to promote economic development. These institutions have become catalysts for economic growth and development in their respective communities. Their contribution to the economic development process has increased from providing individuals with saleable skills to including community activity centers for facilitating and brokering technology transfer.

Educational institutions have become involved in economic development strategies because firm location and relocation in addition to being sensitive to the availability of consumer markets and to energy and raw materials costs, are also sensitive to labor costs. Historically, lowering qualified labor costs through education has been considered as an effective way of attracting high-technology employment to a community (Plaut & Pluta, 1983).

Baker and Austin (1987) found education to be of potential importance in plant location considerations by serving as a dominant factor dimension in the decision process, especially when employees needed highly technical and sophisticated skills. More recently in a presentation to the National Press Club televised on C-Span on 17 April 1995, Lamar Alexander as a newly announced candidate for president reflected on his success in Tennessee. It was his observation that modern approaches to relocation of an existing business or location of a new business were driven primarily by prospective environments. A specific consideration focused on characteristics of the educational environment. The educational possibilities for business locations have been recently enhanced in Alabama through intentional governmental efforts to recruit new opportunities for economic development. Reactions to these efforts in educational communities have not been well defined.

The role, scope, and flexibility in delivery of available, affordable, quality educational programs to specific target populations place administrators of the providing institutions in leadership positions for economic growth and development. The diverse and extensive array of services for new and expanding businesses includes technical: (a) resource centers, (b) transfer, (c) assistance, and (d) learning environments. In addition, educational service may be delivered for partnerships, brokering, and business incubators, as well as for research, development, and testing. A commitment to economic development often requires knowledgeable faculty and staff for linking cooperatively with existing economic development organizations (e.g.

Chambers of Commerce, public and private development organizations and agencies).

The serious slippage of the U.S. economy, high unemployment rates among white and blue collar workers, loss of industrial competitiveness, increased foreign competition designed to shift manufacturing industries and jobs away from the U.S., recent political developments such as the North American Free Trade Agreement, and the idiosyncratic nature of a global economy are all contributing factors to national economic vulnerability. These factors seem to have affected every community and its citizens and opened a window of opportunity for post-secondary education, particularly for 2 year colleges as institutions important to business. Proper responses to business opportunities might include rendering service and providing assistance in controlling or, perhaps, reducing negative local impacts on the business climate.

The traditional programmatic scope of these institutions in economic development of their local communities has been directed toward helping to improve productivity and to create jobs. The major focus of their efforts has been that of (a) training for initial employment; (b) training, retraining, and upgrading for workers already employed or displaced; (c) training workers for new jobs in new and expanding industries; (d) helping new business develop and become profitable; (e) providing professional workshops and seminars; and (f) providing technical assistance. Modern economic problems require continuation of these efforts and their expansion into new and broader commitments.

It is clear that two year colleges in partnership with other groups are in excellent positions to assist with economic development of their local communities. In practical terms assistance could be in the form of providing opportunities that (a) diversify available employment types, (b) create more job opportunities, (c) increase overall income levels, (d) stabilize economic

ups and downs, (e) manage rates of economic development, (f) control types of economic growth, and (g) improve quality of life for local citizens.

In recent years grant support from numerous federal, state, local, and foundations programs/projects to study and promote economic development has been significant. Economic development literature from a number of disciplines contains many models, case studies, and guidelines to provide insights into the process. This information is readily available from most local chambers of commerce, state and federal agencies, and educational research institutions. Productive use (as yet largely unmeasured) of these materials and other resources varies from one community and institution to another. Demographic differences between regions of the country, furthermore, may create specific economic development problems and opportunities. Economic development through emerging entrepreneurships and businesses is projected by many politicians to provide new resources for countering projected downsizing of federal support and to require increasing educational involvement.

Thus, a natural interest in economic development data may be characterized as having comparative dimensions. That is, with most data, evaluators tend to raise comparative questions between competing neighboring cities, neighboring regions, neighboring states, or other neighboring geographic, governmental, or otherwise bounded areas. Usually the focus of such questions is one of knowing, assessing, or testing whether one area is doing decidedly better, about the same as, or decidedly worse than another similar area along one or more economic development dimensions under similar or differing conditions.

The National Education Goals Report for 1992 indicates blue-collar workers were less likely to participate in traditional educational programs than white-collar workers and employers were much less likely to provide educational opportunities to less-educated workers. In fact, employer supported educational opportunities have been received by only 8 percent of

workers with less than a high school diploma and by only 25 percent with a high school diploma in comparison with 48 percent of workers with bachelor's degrees.

Individuals lacking in foundational skills, basic literacy and computation skills, and workplace competencies are excellent pools of prospective students for community and technical colleges. But, have community and technical college educators been too reticent to recognize education as the key factor in economic development? Employers, on the other hand, have become increasingly aware of their need for a workforce that can adapt to changing work requirements, a need that is critical to their economic success. Nevertheless, many existing businesses seem reluctant to expand their operations, and prospective businesses often can not locate in communities where the educational level of the citizens is too low to assure a qualified, prospective employee pool amenable to new skill acquisition.

"Economic Development" is a slogan used by many educators, but its scope, level, and commitment in their terminology remains unclear. Within 2-year southern postsecondary educational programs, the need exists to assess, by economic development activity, in perceptual contexts, the typical institutional leadership response judgement under at least two conditions: (a) those activities that are presently occurring, and (b) those that should be occurring. Comparison of typical response patterns for highly visible institutional classifications should also be undertaken.

In the past there has been an absence of public emphasis on economic development in Alabama at all levels: state, county, and local. With a recent awakening of the potential in Alabama for commercial activity due to an excellent port in Mobile, to many natural resources, and to a ready employee pool, interest has been developing in assessing the range of Alabama assets significant to recruitment of industry. Recent successes are noted for

Mercedes-Benz in Tuscaloosa, Briggs and Stratton in Auburn, and other smaller successes in other parts of the state.

Gainus, in his 94-95 annual report, demonstrated an increased level of attention to economic matters for Alabama: "In 1994, The Alabama College System provided over 1,000 businesses, industries and government agencies with training programs that served over 47,000 employees" (Gainus, 1995, p.18). By comparison with activity over the last decade and earlier, efforts in Alabama to provide employee skills are certainly commendable, but how have educational leaders perceived recent performance in a context of optimum performance. A related question also arises: How does the self-assessment of educational leaders in Alabama compare with self-assessments of educational leaders in neighboring states with whom Alabama must compete in the growing trend of business relocations in the Southeast. An analysis of prevaling against optimum practices, therefore should be helpful for developing educational policy and resource allocation principles in a state with great ambitions and compatible environments, but limited monetary resources.

Statement of the Problem

For Alabama and Non-Alabama administrator groups the central problem was to ascertain levels of difference in their typical opinions regarding importance of 29 critical economic development strategies (as activities) under two conditions: (a) present and (b) ideal (or should be). Each administrator served a 2 year college accredited by the Southern Association of Colleges and Schools (SACS). The 29 strategies were composed into the slightly modified (response options appeared on each page of the original) appended opinionnaire. To provide structure for the problem, two major objectives were formulated, each implying investigative constraints for conducting the study. The objectives were:

1. To determine if there were empirically descriptive, typological clusters of economic development activities as perceived by educational leaders in the southeast under two conditions of involvement: (a) in presently occurring practices, and (b) in ideal or should be occurring practices.

2. To determine if there were meaningful differences between Alabama and non-Alabama administrators in their (a) multivariate presently and should be occurring combinations of practices, and (b) separated, post hoc univariate involvements, first under presently occurring, then under should be occurring conditions.

One can introduce order into the description of the findings with perceptual clustering (available through factor analytic techniques) permitting an empirical search for groupings of items that fit together in such a manner that the observed results for each item theoretically may be attributable to one or a few common phenomena; i.e., factors. The search is empirically accomplished in the 29 dimensional space spanned in the first analysis by the 29 presently occurring items, then (in the second analysis) by the 29 ideal or should be occurring items. Having two analyses thereby allows one statistically to compare the situational clustering patterns for the proximity of actual practice (presently occurring) to ideal practice (should be occurring).

Other comparisons could arise from analyzing contributions of the Between-Subjects demographics to understanding observed variations in the perceptual clusters (presently and should be scores). These demographics could be descriptive of the (a) State: Alabama vs Non-Alabama, and (b) College: Technical vs Post Secondary. Implicit in a completely specified model would be a State by College interaction and interactions of the foregoing Between-Subjects sources with Condition: Present vs Should, the Within-Subjects jointly dependent measures.

Methodology

Subjects and Institutions

Usable data were collected from 345, 2-year postsecondary institutions and secondary area vocational centers accredited by the Southern Association of Colleges and Schools (SACS). Data from the complete group of 345 served the scaling needs of the study under the assumption of greater validity and higher reliability for scales based on more rather than on a restricted number of cases. Moreover, the present problem was conceived as part of a larger problem involving all of the 345 administrators. The larger sample of 345 provided comprehensive data in determining factor analytic (validity) dimensions that are used as jointly dependent measures in MANOVA modeling of levels of Condition (Present vs Should) for comparisons for State (AL vs Non-AL), and College (Community vs Technical). Secondary Area Vocational Centers and Private Community and Technical Colleges were not continued beyond the factor analytic stage.

A breakdown of cases for the 75 continued institutions is as follows:

(1) Between States: 7 Alabama and 68 Non-Alabama.

(2) Between College: 50 Community and 25 Technical.

(3) Interaction of State by College: 2 Alabama Community, 5 Alabama Technical, 48 Non-Alabama Community, and 20 Non-Alabama Technical.

Data Analysis

The data were obtained with an instrument developed from a modified list of effective economic development strategies (Goetsch & Richburg, 1989) and administered to elicit Present and Should assessments. Data were analyzed univariately, bivariately, and multivariately. Exploratory and inferential statistics had at various analytic stages both non-parametric and parametric attributes. Univariately, responses were tested against chance; bivariately, combinations of responses were tested; multivariately, factor analytic with principal components extractions and sequential MANOVA techniques were

employed. The schematic presented as Figure 1 contains a breakdown of the modeled independent variables with their corresponding group counts, and means. The schematic guided the MANOVA analyses.

Insert Figure 1 about here

Principal Components. The principal components extraction method for factor analysis was chosen in an effort to account for maximum observed variance in the 29 items responded to as representing to the respondents their respective perceptual view for each of its (a) present- and (b) ideal-importance. It was reasoned that the nature of the data was such that there should be no distinction between communality and unique variance (that is, 100% of each variable's variance should be factored) and that a corresponding factor analytic method (retaining 1's in the diagonals of the factored matrices) should be chosen in determining the empirical dimensions of the data. These considerations were followed since the authors assumed both types of variation to have influential economic development consequences (or constraints) controlling productivities of educational leaders. Several exploratory approaches were applied to the data under different degrees of standardization prior to settling on analyses of raw data cosines as being the most efficacious approach.

Extracted Components. PROC FACTOR of SAS was the methodology of choice for computing the factor solutions. Output from the two (Present and Ideal) factor analyses was scored with PROC SCORE. Scored factor output including rescaling (reducing decimal precision for aesthetic purposes) was transmitted to PROC GLM. PROC GLM computed MANOVA results for the between-subjects Alabama and Non-Alabama (State) groups, the Community and Technical (College) groups, and the interaction between State and College. GLM further computed

within-subjects responses for Present vs Ideal (Condition). GLM defaulted to interactions involving response Condition with State and College factors.

Results

Table 1 presents the correlation matrices for 345 cases on which the principal components analyses were computed for the Presently Occurring (upper triangular) and Ideal or Should Be Occurring (lower triangular) conditions. Because Proc GLM of SAS calculated the factors under constraints of NOINT, the extracted components were based on cosines between raw data vectors. (Cosines between raw data vectors are the conceptual equivalents to correlations between standardized data vectors.)

Insert Table 1 about here

One component for each condition. Summaries of the principal components analyses for the two conditions are presented as Table 2. One notes for each condition that Kaiser's measure of sampling adequacy (0.989) was sufficiently large for validity. One also notices a single component accounted for about 86% of the observed variance for the Presently Occurring condition and about 93% for the Ideal condition. At the Principal Components Extraction Stage, the communalities for all variables exceeded .88 for the Presently Occurring analysis and .94 for the Ideal.

Insert Table 2 about here

Factor Score Coefficients for the Principal Components Analyses, retaining one principal component for Present and one for Should, were of about the same order of magnitude within each of the two conditions. Thus, the observed, raw data values contributed about equally to their respective factor scores in each condition.

MANOVA. The established pattern of presenting results under (a) Present Practice and (b) Ideal Assumptions (Should) continues in Table 3 for Sample Characteristics relevant to MANOVA outcomes. In addition, the rightmost section of the table presents distribution statistics for the Ratio of Should to Present observations for the 75 cases analyzed with the MANOVA procedure. Mean values for Ratio suggest: (a) when they are approximately 1, that Present practice of respondents was at the level they felt was about Ideal; (b) when closer to zero (0), that Present practice accordingly was at higher levels than Ideal practice; and (c) when larger than 1, that Present practice was accordingly at lower levels. These data are useful for interpretation of the MANOVA and ANOVA findings.

Insert Table 3 about here

Table 4 presents Univariate ANOVA Results (from MANOVA) under conditions of Present and Ideal practice. The State contrast shows no significant difference, at the 0.05 level, between Alabama and Non-Alabama for either Present or Ideal practices. The College contrasts indicate significant differences, with tail probabilities less than 0.05 between Technical and Community Colleges for both Present and Ideal Conditions. Neither State by College interaction is significant. The model under Present practice accounts for about 6% of the variance (R^2), and under Ideal, for about 11%. Notice that the total variability under Present practice (34,398) was more than double that under Ideal (14,753).

Insert Table 4 about here

The top portion of Table 5 presents Multivariate results for the between-subject sources in the model computed for MANOVA. Here, Present and Ideal

means as numeric vectors were analyzed together. On the multivariate, left side of the table, the numeric vectors were laid out such that inter-correlation between Present and Ideal contributed to the Wilks' Lambdas in the second column for State, College, and the State by College interaction. (All F-ratio equivalents on the left side of Table 5 are presented with exact precision.) On the right side of the table are presented results for multivariate analyses computed without consideration for correlations between Present and Ideal through laying out the data univariately; that is, laying out the two conditions as a single long vector of 150 importance elements, with each element keyed to Present or Ideal through a classification variable indexing on each row whether the condition was Present or Ideal. In methodological terms, the right half of Table 5 presents results of computing, by univariate unweighted least squares considerations, the same Sources as are reported multivariately on the left side.

Multivariate between-subject findings on the right (univariate layout) side of Table 5 are consistent with the univariate findings separately presented for Table 4 under the 2 conditions. That consistency is reinforced with the within-subject findings of Table 5 in the lower portion showing a significant difference only for the multivariate interaction between Condition and State.

Insert Table 5 about here

Findings and Conclusions

Figure 1 (referenced earlier) schematically relates all centroid and point estimate contrasts in Multivariate Testing of the Present and Should measurements as they would be laid out in vectors and corresponding derived points for MANOVA computations controlled by PROC GLM in SAS.

General Notes: Each vector of cell means (each centroid) is indexed with an upper case alphabetic character and a parenthesized m (for multivariate). The mean for the univariate display for a cell is similarly indexed with an upper case alphabetic character but with a parenthesized u (for univariate).

ANOVA Tests. Results of the Present and Should data would be independently displayed and separately tested in analyses ignoring the correlation between the two vectors. As such the ANOVA design would provide only for between subject contrasts. ANOVA marginal effects for State first would be computed from Present means in the E and F vectors of Figure 1, then for the Should means in the same vectors. Similarly, ANOVA marginal effects for College would be computed from the G and H vectors. ANOVA tests for interaction effects independently would involve first the Present means in cells A, B, C, and D, then the Should means.

MANOVA Tests. Each cell of Figure 1 contains a vector of 2 means, Present on the left and Should on the right, for multi-dependent variable testing with MANOVA. Each cell also contains a point estimate for the mean if the data were laid out in a univariate display for multivariate analysis. Thus, between subject differences are tested as follows by comparing 2-element vectors of means:

1. For State (Alabama vs Non-Alabama) effects from the centroids and means indexed with E and F.
2. For College (Community vs Technical) effects from the centroids and means indexed with G and H.
3. For State by College interaction effects from the centroids and means indexed with A, B, C, and D.

Within subject differences due to Condition (Present vs Should) and its interactions are tested as follows producing identical probability outcomes for both multivariate and univariate (identical) layouts of Table 5:

4. For Condition (Present vs Should) effects from the point estimates of 105.46 and 108.18 due to

{(Present: 105.46=Avg(99.53,105.8,105.5,117.0))

vs

(Should: 108.18=Avg(100.4,102.8,119.9,109.6))}.

5. For Condition by State interaction effects from the point estimates in State marginals with Present and Should broken out producing the 4 identical centroid/point values by rows: (102.9 114.3) (109.1 104.8).

6. For Condition by College interaction effects from the point estimates in College marginals with Present and Should broken out producing the 4 identical centroid/point values by columns: (105.3 102.7) (114.7 111.7).

7. For Condition by College by State interaction effects from the point estimates in the joint effects cells with distinctions for each of the 3 interacting sources producing the 8 identical centroid/point values by rows and columns: {(93.53 100.4)(105.8 102.8)} {(105.5 119.9) (117.0 109.6)}. Individual values represent condition means, braces separate the means into college groups, and parentheses indicate state separations.

These notes to Figure 1 permit the reader to distinguish (a) the marginal and joint effect means affecting the ANOVA computations in Table 4, and (b) the specific centroids and means contributing to the tabulated Multivariate- and Univariate-Layout statistical findings in the columns of Table 5 as indicated under the dominating spanner.

The ANOVA Findings and Conclusions

There are just two instances of statistical significance at the .05 level for the independent Present and Should ANOVAs. As may be noted in Table 4, for both the Present and the Should data there are statistically significant

differences due to College; that is, the Community colleges differ from the Technical. Technical College administrators typically score higher than Community under both Conditions (114.7 vs 105.3 for Present, and 111.7 vs 102.7 for Should).

The MANOVA Findings and Conclusions

Three sources contain significant differences in the centroids/means analyzed under MANOVA assumptions. In two of the sources (State and College) findings for the univariate layout of the data differ from findings for the multivariate. For the third source identical findings and conclusions arise for both layouts.

For State as a source for explaining the observed variance, the conclusion for the multivariate layout is to reject the hypothesis of chance variation at the .05 level while the conclusion for the univariate layout is not to reject. An examination of the means allows one to resolve these apparently contradictory findings. In the multivariate layout one observes for the Alabama administrator centroid that the Present mean is smaller than the Should mean while for the Non-Alabama administrator centroid the mean for the Present is larger than for the Should Condition. In the univariate layout the means combine in such a way that the difference in the State combinations is relatively small: 108.6 for Alabama vs 106.9 for Non-Alabama.

For College as a source, the conclusion for the multivariate layout is not to reject the hypothesis of chance at the .05 level while for the univariate layout one rejects the hypothesis. The reader should note this interpretive situation is the inverse of the preceding one with significance lying with the point estimates rather than with the vector (centroid) estimates. The difference between the College combinations is relatively large: 103.9 for Community vs 113.2 for Technical. In the centroids one notices the Present Condition means are larger than the Should for both

Community and Technical administrators but are of relatively the same magnitude: a 2.6 difference for Community and a 3.0 difference for Technical.

Implications

Alabama administrators tend to perceive themselves to be doing less than they should for economic development while Non-Alabama administrators tend to perceive themselves to be doing more than they should. This may be explained by considering:

1. Other than Alabama southern states, particularly Tennessee, Florida, and North and South Carolina have had regional, national, and international plants for long enough to have gained considerable experience in doing whatever has to be done in order to attract industry. In Alabama, on the other hand, because Alabama has had a limited history of economic development emphasis, there has been relative inexperience in dealing with, particularly in planning for, multiple regional and national companies.

2. Most analysts would suggest that there are differences between Alabama and Non-Alabama in the national and international images of both. The international and national images of Alabama may have had a negative effect on how educational leaders in the state not only view themselves for what they are, but also for what they should aspire to be.

3. With the finding of no significant difference for the univariate layout of the data one notes that there is only chance statistical variation between the combined measures. This, in short, indicates deficiency perceived for themselves by Alabama educators balances the apparent economic development potency perceived by Non-Alabama educators.

Both Community and Technical college administrators typically perceive themselves to be doing more for economic development than they should with about the same difference in actual vs ideal productivity. On the other hand, Technical College administrators perceive themselves in their combined scores

at a level about 9.3 units (9%) larger than their Community College colleagues. Some implications of these observations follow:

1. Individuals, agencies, and groups interested in promoting economic development, expecting new and creative strategies and procedures from the local college community, will need to redirect the thinking and commitment of local educational leadership in order to meet their expectations. This is but a reasonable expectation since, typically, the educational leadership seems to perceive themselves to be already more involved in economic development than they should be.

2. One could conjecture that Technical Colleges tend to prepare students for immediate local employment thus are in a position for timely feedback and measurement of their economic development energies. Community Colleges, on the other hand, tend to prepare students for a variety of futures, often futures (such as for 4-year colleges or universities in transition from college to work) with amorphous or delayed economic consequences. Thus, feedback to Community College administrators may be non-existent, relatively inaccurate, or otherwise muddled. Differences in expectations for graduates and in follow-up of them may explain the observed difference in perceptions of the two types of administrators.

3. Generally, the last institution attended is the focal institution for success or failure of students entering the workforce. Technical College students normally do not (vertically or horizontally) transfer readily from one institution to another, whereas, transfer is relatively common for Community College students. Technical College graduates would seem more readily disposed to provide accurate, timely, economically meaningful feedback to Technical College administrators than would students transferring or matriculating from Community Colleges to their administrators.

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Table 1

Correlation (x 100) Matrices for Responses to 29 Economic Development Importance Items Factored under Two Conditions: Presently Occurring (Upper Triangular) and Ideal or Should Be Occurring (Lower Triangular) (N=345)

Item	Item Number																												
	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1	100	88	86	84	74	82	83	86	83	81	83	84	81	82	83	81	82	83	69	75	79	77	80	82	80	79	83	77	78
2	96	100	86	88	81	87	87	91	89	86	89	89	85	87	85	85	86	86	71	78	81	81	83	85	84	82	87	80	82
3	95	95	100	87	75	81	84	88	85	86	84	89	84	86	87	85	86	87	75	79	81	80	85	87	86	84	87	78	81
4	94	95	94	100	80	90	88	95	92	93	90	92	89	92	89	92	88	92	78	81	87	85	88	92	89	87	92	83	84
5	92	94	92	92	100	80	78	80	79	78	80	79	75	78	76	79	76	77	67	73	72	77	75	76	76	72	78	71	74
6	92	94	92	95	93	100	89	90	89	87	88	89	84	89	85	86	83	86	71	77	80	82	84	84	83	81	87	79	80
7	92	94	93	94	91	94	100	91	89	90	90	90	86	90	88	88	89	88	75	80	86	84	87	88	87	86	89	80	84
8	94	95	94	97	92	95	95	100	95	93	91	93	90	93	89	92	89	93	77	81	87	84	90	92	89	87	93	85	85
9	93	95	93	97	93	95	95	98	100	92	89	91	87	91	86	89	87	90	75	80	84	83	87	89	86	84	91	85	84
10	93	94	93	96	92	94	95	96	96	100	90	93	90	92	90	92	90	93	80	82	88	86	91	94	90	89	92	84	87
11	92	93	92	94	92	95	94	94	95	95	100	93	86	89	87	88	87	89	76	81	85	84	86	87	86	84	89	81	84
12	94	95	95	96	92	96	96	96	96	97	96	100	88	92	90	92	89	92	80	84	88	86	89	91	89	87	92	84	86
13	93	93	93	94	91	93	94	94	94	95	93	95	100	91	90	90	90	91	78	82	87	83	88	91	89	89	91	81	87
14	93	94	93	96	92	95	95	96	96	96	94	96	94	100	92	91	88	91	78	81	87	85	90	91	89	88	93	82	85
15	92	94	93	94	91	94	94	94	94	95	94	95	95	96	100	90	91	92	79	83	86	86	88	90	91	91	90	81	87
16	93	94	94	95	93	94	94	95	95	95	93	96	95	95	95	100	90	93	81	83	87	88	90	93	91	89	92	83	88
17	93	94	94	94	92	94	94	95	94	95	94	96	95	95	96	96	100	92	81	86	87	85	89	92	91	91	89	82	89
18	93	94	93	96	92	94	94	96	96	97	94	96	95	96	96	96	96	100	82	85	89	87	92	95	91	92	93	85	88
19	89	89	89	90	88	87	90	89	89	91	89	91	91	90	91	91	92	92	100	84	78	79	79	82	82	80	78	74	81
20	89	89	90	89	89	89	90	89	90	91	89	92	92	91	91	92	93	93	95	100	81	80	82	83	84	83	82	76	82
21	91	92	91	94	89	91	93	93	93	94	92	94	93	93	94	94	94	95	90	91	100	86	89	89	87	89	88	79	86
22	90	91	89	92	90	91	91	92	92	93	91	92	92	93	93	94	94	94	91	91	94	100	85	87	88	85	86	77	85
23	92	93	92	94	91	93	94	94	94	95	92	95	94	94	94	95	95	96	91	91	94	94	100	94	90	89	91	82	87
24	93	94	93	96	92	93	94	96	95	96	92	96	94	95	94	96	96	97	92	92	94	94	96	100	93	92	93	84	90
25	93	93	93	95	93	93	94	94	94	96	93	96	94	95	96	96	96	97	92	93	94	95	96	97	100	91	90	81	90
26	91	92	91	92	89	90	92	92	92	94	89	93	93	92	93	93	94	95	91	92	93	92	94	95	95	100	89	81	88
27	92	94	92	95	91	93	94	95	94	95	92	95	94	95	94	96	94	96	90	90	94	93	95	96	95	94	100	85	87
28	90	91	89	91	88	90	90	91	92	91	89	92	91	91	90	91	92	92	89	89	91	90	91	93	92	92	92	100	82
29	91	92	90	92	91	91	91	91	92	93	91	93	93	92	92	93	94	94	91	91	93	94	93	95	95	94	94	91	100

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Table 2

Summary of Principal Components Factor Analyses of Levels of Importance for Economic Development Items Under 2 Conditions: Present and Should or Ideal (N=345)

Kaiser's Over-all MSA: Present=0.989; Should=0.989

1st 2 Eigenvalues for Correlation Matrices:

	Present		Should	
	1	2	1	2
Eigenvalue	24.973	0.612	27.091	0.297
Difference	24.361	0.246	26.794	0.124
Proportion	0.861	0.021	0.934	0.010

Factor Pattern (x 100) Matrices for Principal Components Extraction:

Present						Should					
P1	88	P11	94 *	P21	92	S1	96	S11	96	S21	95
P2	92	P12	96 *	P22	91	S2	97 *	S12	98 *	S22	96
P3	91	P13	94 *	P23	94 *	S3	96	S13	97 *	S23	97 *
P4	95 *	P14	95 *	P24	96 *	S4	97 *	S14	98 *	S24	98 *
P5	83	P15	95 *	P25	95 *	S5	95	S15	97 *	S25	98 *
P6	91	P16	96 *	P26	93 *	S6	96	S16	98 *	S26	96
P7	93 *	P17	95 *	P27	96 *	S7	97 *	S17	98 *	S27	97 *
P8	96 *	P18	97 *	P28	88	S8	98 *	S18	98 *	S28	94
P9	94 *	P19	84	P29	92	S9	97 *	S19	94	S29	96
P10	96 *	P20	88			S10	98 *	S20	94		

Final Communality Estimates Totals

Present = 24.973 h**2						Total = 27.091 h**2					
P1	0.77	P11	0.87	P21	0.85	S1	0.92	S11	0.92	S21	0.93
P2	0.84	P12	0.92	P22	0.82	S2	0.94	S12	0.96	S22	0.91
P3	0.83	P13	0.88	P23	0.89	S3	0.92	S13	0.94	S23	0.94
P4	0.91	P14	0.91	P24	0.92	S4	0.95	S14	0.95	S24	0.96
P5	0.69	P15	0.90	P25	0.90	S5	0.90	S15	0.95	S25	0.96
P6	0.83	P16	0.91	P26	0.87	S6	0.93	S16	0.95	S26	0.92
P7	0.87	P17	0.90	P27	0.92	S7	0.94	S17	0.96	S27	0.94
P8	0.93	P18	0.93	P28	0.77	S8	0.95	S18	0.97	S28	0.89
P9	0.89	P19	0.71	P29	0.84	S9	0.95	S19	0.88	S29	0.92
P10	0.92	P20	0.77			S10	0.96	S20	0.89		

Factor Score Coefficients * 10

Present						Should					
P1	0.35	P11	0.37	P21	0.37	S1	0.35	S11	0.35	S21	0.36
P2	0.37	P12	0.38	P22	0.36	S2	0.36	S12	0.36	S22	0.35
P3	0.36	P13	0.38	P23	0.38	S3	0.35	S13	0.36	S23	0.36
P4	0.38	P14	0.38	P24	0.38	S4	0.36	S14	0.36	S24	0.36
P5	0.33	P15	0.38	P25	0.38	S5	0.35	S15	0.36	S25	0.36
P6	0.36	P16	0.38	P26	0.37	S6	0.36	S16	0.36	S26	0.35
P7	0.37	P17	0.38	P27	0.38	S7	0.36	S17	0.36	S27	0.36
P8	0.38	P18	0.39	P28	0.35	S8	0.36	S18	0.36	S28	0.35
P9	0.38	P19	0.34	P29	0.37	S9	0.36	S19	0.35	S29	0.35
P10	0.38	P20	0.35			S10	0.36	S20	0.35		

Table 3

Sample Characteristics of Present and Ideal Assumptions of Economic Development Practices by State and Training Institutes.

	Present							Should						Ratio					
	N	Max	Q3	Mean	SD	Q1	Min	Max	Q3	Mean	SD	Q1	Min	Max	Q3	Mean	SD	Q1	Min
Alabama	7	121.0	111.4	102.1	11.13	93.70	88.40	128.4	122.8	114.3	12.01	109.8	91.05	1.25	1.16	1.12	0.07	1.06	1.03
Non-Alabama	68	149.3	125.6	109.1	23.06	93.71	47.57	131.7	114.6	104.8	15.01	93.44	60.94	2.27	1.04	0.99	0.23	0.86	0.71
Comm Col	50	149.3	121.6	105.3	22.18	89.80	51.44	131.7	112.2	102.7	14.11	92.19	65.08	2.27	1.07	1.01	0.26	0.87	0.71
Tech Col	25	145.1	129.7	114.7	21.52	102.3	47.57	131.7	122.3	111.7	15.04	109.5	60.94	1.28	1.09	0.99	0.14	0.87	0.79
Alabama by Comm Col	2	98.65	98.65	93.53	7.24	88.40	88.40	109.8	109.8	100.4	13.26	91.05	91.05	1.11	1.11	1.07	0.06	1.03	1.03
Alabama by Tech Col	5	121.0	111.4	105.5	11.03	97.06	93.70	128.4	122.8	119.9	6.15	116.6	112.2	1.25	1.16	1.14	0.07	1.10	1.06
Non-Alabama by Comm Col	48	149.3	122.2	105.8	22.49	90.11	51.44	131.7	112.3	102.8	14.27	92.26	65.08	2.27	1.05	1.01	0.26	0.86	0.71
Non-Alabama by Tech Col	20	145.1	134.3	117.0	23.05	104.8	47.57	131.7	122.3	109.6	15.99	99.42	60.94	1.28	1.02	0.96	0.12	0.86	0.79

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Table 4

Summary of Univariate Present and Ideal MANOVA Results for Economic Development Practices of Alabama and Non-Alabama Community and Technical College Administrators

Source	df	SS	MS	F	Pr>F
		Present Economic Development Practices			
State	1	311.5	311.5	0.64	.425
College	1	1981.	1981.	4.09	.047
State x College	1	0.694	0.694	0.00	.970
Error	71	34398.	484.5		
Model R^2 = .063					
		Ideal Economic Development Practices			
State	1	575.4	575.4	2.77	.101
College	1	1004.	1004.	4.83	.031
State x College	1	204.0	204.0	0.98	.325
Error	71	14753.	207.8		
Model R^2 = .108					

Table 5

Summary of Multivariate MANOVA Results for Present and Ideal Economic Development Practice Assumptions of Technical Training Centers Classified by Governance and Type of Institution

Data Layout	Multivariate Layout						Univariate Layout				
Source	Lambda	Prec	F	df N	df D	Pr>F	df	SS	MS	F	Pr>F
						Between					
State (Al vs NonAL	0.90	Ex	3.77	2	70	.028	1	20.08	20.08	0.04	.847
College (Com vs Tch)	0.93	Ex	2.78	2	70	.069	1	2903.	2903.	5.44	.023
StateXCollege	0.98	Ex	0.71	2	70	.496	1	114.2	114.2	0.21	.645
						Within					
Condition	0.98	Ex	1.78	1	71	.186	1	283.7	283.7	1.78	.186
Condition x State	0.93	Ex	5.45	1	71	.022	1	886.8	886.8	5.45	.022
Condition x College	0.99	Ex	0.52	1	71	.475	1	82.22	82.22	0.52	.475
Condition X State X College	0.99	Ex	0.57	1	71	.453	1	90.43	90.43	0.57	.453

State	College				State Marginals		n
	Comm		Tech				
	Centroid	Point	Centroid	Point	Centroid	Point	
	Pr Sh	Pr&Sh	Pr Sh	Pr&Sh	Pr Sh	Pr&Sh	
	A(m)	A(u)	B(m)	B(u)	E(m)	E(u)	
AL	93.53 100.4	96.96	105.5 119.9	112.7	102.9 114.3	108.6	7
	C(m)	C(u)	D(m)	D(u)	F(m)	F(u)	
Non-AL	105.8 102.8	104.3	117.0 109.6	113.3	109.1 104.8	106.9	68
College	G(m)	G(u)	H(m)	H(u)			
Marginals	105.3 102.7	103.9	114.7 111.7	113.2			
n	50		25				75

Figure 1. Schematic indicating (a) ANOVA contrasts in separate Univariate testing of all Present Means and all Should means independently for results in Table 4 and, (b) MANOVA contrasts in simultaneous Multivariate Testing for both Multivariate and Univariate Layouts of Present and Should Vectors in Table 5. Several notes pertaining to the schmatic are incorporated into the narrative.

Appendix

Relevant Section of Economic Development Survey Instrument

SECTION B: ECONOMIC DEVELOPMENT OBJECTIVES FOR EDUCATIONAL INSTITUTIONS

DIRECTIONS: This questionnaire contains 29 items thought important to economic development. Rate each item in the left columns according to the amount of involvement presently occurring at your institution and in the right columns according to the extent to which you believe the activity should be occurring. If you have no knowledge of the activity presently occurring please circle "?". In any case, remember to circle a choice on the should be occurring scale. Involvement is expressed in time quantities as follows:

Range of Time	
1. Always	100%
2. Frequently, if not always	75-99%
3. Fairly often	50-74%
4. Sometimes	25-49%
5. Seldom	1-24%
6. Never	0%

1. Maintain a master plan for economic development.

2. Staff development and in-service programs to educate faculty members, staff personnel, and administrators in the basic principles of economic development.

3. Designate a person within your college that is primarily responsible for economic development.

4. Top administrator belongs to an area/local economic development organization in the local community (e.g.Committee of 100, Chamber of Commerce).

5. Provide the opportunity for student involvement in economic development activities (e.g. student Chamber of Commerce within the College.

6. Encourage advisory committee members (institutional and instructional program) to join the local economic development organizations.

7. Work with existing business and industrial firms to conduct back-to-work programs for updating teacher competencies.

8. Keep the curriculum in line with the immediate and future needs of local employers.

9. Work with local employers to provide cooperative education and/or internship opportunities for student.

10. Provide through formal partnerships, training facilities for use by local employers.

11. Collect, updating, and disseminating socio-economic data about the community on a regular basis.

(appendix continues)

12. Share information about technological trends with local economic development organizations and local companies.

13. Seek local, state, and federal grants to conduct customized training for individual business and industrial firms.

14. Work with the local Private Industry Council in job generating activities.

15. Establish a relationship with state economic development organizations (e.g. State Department of Commerce).

16. Conduct educational and cultural activities of interest to new and existing business and industrial firms.

17. Conduct Train-the Trainer workshops, course planning, and curriculum development assistance for local business and industrial firms.

18. Conduct customized training to meet the specific training needs of local business and industrial firms (written agreements).

19. Establish a business development and/or technology transfer center.

20. Provide resources (facilities staff, funds, equipment etc.) to be used to establish a demonstration center.

21. Conduct adult literacy training programs for business and industrial firms.

22. Provide entrepreneurship training programs.

23. Conduct licensure and certification training for local employers.

24. Sponsor customized short courses and seminars taught in-house for local employers.

25. Co-sponsor conferences and meetings with local economic development organizations.

26. Conduct start-up training for new business and industrial firms.

27. Conduct training programs for targeted populations (e.g. displaced workers, inmates, rehabilitation client.

28. Provide apprenticeship linkage training programs.

29. Provide training for local chapters of professional organizations.

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It is to be emphasized that the complete complement of cases served to supplement the data set for measurement and scaling purposes. They provided data enabling a factor analysis with stronger measures of sampling adequacy and enhanced validity coefficients in the factored matrix. Cases representing institutional types other than Technical and Community Colleges were excluded from the analyses contributing to the MANOVA sections of this report.